WASHINGTON DEPARTMENT OF ECOLOGY

ENVIRONMENTAL ASSESSMENT PROGRAM

FRESHWATER MONITORING UNIT

STREAM DISCHARGE TECHNICAL NOTES

STATION ID: 35D100

STATION NAME: Asotin Creek above George Creek

WATER YEAR: 2012

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Introduction

Watershed Description

Asotin Creek is a tributary of the Snake River, flowing through the town of Asotin in southeastern Washington. The area is semi-arid, with land use being pasture/rangeland, forest, and cropland.

Asotin Creek contains summer steelhead, spring Chinook, and bull trout. All of these are listed as threatened under the Endangered Species Act.

Gage Location

The Asotin Creek above George Creek stream gage is located on the left bank, one mile above the confluence with George Creek.

Table 1.

Drainage Area (square miles)	172 (Streamstats)
Latitude (degrees, minutes, seconds)	46° 19' 23" N
Longitude (degrees, minutes, seconds)	117° 08' 06" W

Discharge

Table 2. Discharge Statistics.

Mean Annual Discharge (cfs)	80
Median Annual Discharge (cfs)	47
Maximum Daily Mean Discharge (cfs)	419
Minimum Daily Mean Discharge (cfs)	28
Maximum Instantaneous Discharge (cfs)	447
Minimum Instantaneous Discharge (cfs)	25
Discharge Equaled or Exceeded 10 % of Recorded Time (cfs)	183
Discharge Equaled or Exceeded 90 % of Recorded Time (cfs)	31
Number of Days Discharge is Greater Than Range of Ratings	6
Number of Days Discharge is Less Than Range of Ratings	0

Note: Statistics displayed in Table 2 may not include values in which the predicted discharge exceeds the range of ratings.

Narrative

Peak flow occurred on March 30, 2012. The lowest flows of the water year occurred in the middle of August.

Error Analysis

Table 3. Error Analysis Summary.

Logger Drift Error (% of discharge)	0.6
Weighted Rating Error (% of discharge)	11.8
Total Potential Error (% of discharge)	13.4

Rating Table(s)

Table 4. Rating Table Summary

Rating Table No.	501	601	7
Period of Ratings	10/1/11 to 1/3/12	12/30/11 to 3/30/12	3/15/12 to 9/30/12
Range of Ratings (cfs)	18 to 856	25 to 856	16 to 524
No. of Defining Measurements	7	4	11
Rating Error (%)	9.8	11.9	12.7

Rating Table No.			
Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

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Period of Ratings			
Range of Ratings (cfs)			
No. of Defining Measurements			
Rating Error (%)			

Narrative

Seven discharge measurements were taken throughout the water year, ranging from 31 to 261 cfs. The shift to rating 601 was caused by a mid-winter precipitation event. Spring runoff in late March led to the shift to rating 7.

Stage Record

Table 5. Stage Record Summary

Minimum Recorded Stage (feet)	0.84
Maximum Recorded Stage (feet)	3.95
Range of Recorded Stage (feet)	3.11
Number of Un-Reported Days	12
Number of Days Qualified as Estimates	22
Number of Days Qualified as Unreliable Estimates	0

Narrative

Six of the unreported days were due to ice-impacted data. The remaining unreported days were due to a rating table exceedance. Data sets following ice-impacted periods were qualified as estimates. These periods extended until a manual, ice-free primary gage index reading could be obtained.

Modeled Discharge

Table 6. Model Summary

Model Type (Slope conveyance, other, none)	Slope Conveyance
Range of Modeled Stage (feet)	3.5 to 4.75
Range of Modeled Discharge (cfs)	440 to 856
Valid Period for Model	10/1/11 to 3/30/12
Model Confidence	1.9%

Surveys

Table 7. Survey Type and Date (station, cross section, longitudinal)

Type	Date
Station, X-sec., Long.	10/11/2011

Activities Completed

L&I retrofit completed in early June.